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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,591	04/14/2004	Sean Andre Rockarts	9-2993-518US	6217

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EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT PAPER NUMBER

3745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/823,591	<b>Applicant(s)</b> ROCKARTS ET AL.	
	<b>Examiner</b> Christopher Verdier	<b>Art Unit</b> 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 October 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 16-19 is/are allowed.  
6) ☒ Claim(s) 1-15 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 4-14-04, 10-26-06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Applicant's Amendment dated October 26, 2006 has been carefully considered but is non-persuasive. Claims 1-19 are pending. The Replacement Sheet of Drawings and the New Sheet of Drawings dated October 26, 2006 are acceptable. The abstract and specification have been amended to correct the informalities therein. The claims have been amended to overcome the informalities therein. The claims have been amended to overcome the rejections under 35 USC 112, second paragraph set forth in the first Office action. Correction of these matters is noted with appreciation.

With regard to Leone and Staats, Applicant has argued that the amended claims are not anticipated by these references, because the fasteners of Leone and Staats are not and cannot be used as a selectively attachable balancing weight to the engine shaft for balancing since both of these references teach that all fasteners must be installed and are required for connection purposes and would be provided symmetrically around the part and cannot possibly provide a rotational balancing function. Applicant has further argued that in relation to an apparatus for rotationally balancing a shaft, a balance weight is not any element or fastener having a weight, but must be an element which has a desired weight and can be attached only at a required position, and that the fasteners of Leone and Staats serve only a connection purpose, not a balancing purpose, and neither reference teaches that fasteners can be omitted for balancing purposes. These arguments are not persuasive because the amended claims are still anticipated by both Leone and Staats. Independent claim 1, lines 6-9 uses the language "at least one standard fastener for selectively engaging only the plate ... to thereby add an asymmetric balancing weight to the plate relative to a rotational axis of the shaft." This is a recitation of

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intended use and a functional recitation. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. As set forth in MPEP 2114, “>While features of an apparatus may be recited either structurally or functionally, claims<directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >In *re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)”. Additionally, “A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).” In *Leone*, at least one standard fastener 24 is provided for selectively engaging only the plate 20 to thereby add an asymmetric balancing weight to the plate relative to a rotational axis of the shaft 26. The standard fastener is provided for selectively engaging only the plate when the nose cone 16 is not attached, during initial assembly. In *Staats*, at least one standard fastener 34 is provided for selectively engaging only the plate 14 to thereby add an asymmetric balancing weight to the plate relative to a rotational axis of the shaft 13. The standard fastener is provided for selectively engaging only the plate when the parts 24, 27, and 38 are not attached, during initial assembly. In both *Leone* and *Staats*, the respective elements 24, 34 are capable of use as a selectively attachable balancing weight to the engine shaft to provide a rotational balancing function, since these elements clearly have masses. These elements can be attached at any at a required position. *Leone* and *Staats* also anticipate claims 10-15 as set forth below.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9, lines 2-3 recite “a central aperture for receiving the shaft extending the aperture with clearance between the shaft and aperture”. This is incomplete and therefore unclear.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 10-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Leone 3,990,814. Note the apparatus for balancing a shaft 26 of an aircraft engine 10 comprising a round plate 22 defining a first group of unnumbered holes (the upper holes) axially extending therethrough, the round plate being co-axially attached to the shaft at a forward end of the shaft, and at least one standard fastener 24 for selectively engaging only the plate through at least one of the holes in the first group to thereby add an asymmetric balancing weight to the plate relative

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to a rotational axis of the shaft. The plate further comprises a mounting system independent of the first group of holes for mounting a nose cone 16 to the plate, with the mounting system comprising a second group of unnumbered holes (the lower holes) axially extending through the plate for receiving mounting bolts 24. The plate comprises a position element (near the junction of 20 and 22) on a forward surface thereof for co-axially aligning a nose cone 16 with the shaft. The plate comprises a position element (unnumbered, adjacent 30) on a rear surface thereof for co-axially aligning the plate with the shaft. Claim 1, lines 6-9 use the language “at least one standard fastener for selectively engaging only the plate ... to thereby add an asymmetric balancing weight to the plate relative to a rotational axis of the shaft.” This is a recitation of intended use and a functional recitation. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997). The standard fastener is provided for selectively engaging only the plate when the nose cone 16 is not attached, during initial assembly. Concerning claims 10-15, note the apparatus for an aircraft engine 10, comprising a nose cone 16 of the aircraft engine, at least one balance weight element 24, a member 20 centrally mounted to a forward end of a rotatable shaft 26 of the aircraft engine, the member including a mounting apparatus (bolts 24 other than those encompassed by the at least one balance weight element 24) by which the nose cone is mounted to the member, and a balancing apparatus distinct from the mounting apparatus (the unnumbered holes through which

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the balancing bolts 24 pass), and the balancing apparatus of the member adapted to retain the at least one balance weight element to the member asymmetrically relative to shaft rotation to thereby rotationally balance the shaft. The member includes a plurality of attachment points (unnumbered, near 22) and the respective at least one weight element and the attachment points are configured permit the at least one weight element to be attached to the member from a forward side of the member. The nose cone and the mounting apparatus are configured to permit the nose cone to be mounted to the member from a forward side of the member and cover the at least balance weight element (note that the balance weight element 24 is partially covered, which is broadly considered to be covered). The member 20 comprises a first positioning element (the flange adjacent 30 on element 20) to align the member with the shaft for the central mounting of the member to the shaft. The member comprises a second positioning element (the flange 22) to co-axially align the nose cone with the member.

Claims 1-2, 4-5 and 10-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Staats 1,878,907. Note the apparatus for balancing a shaft 13 of an aircraft engine 10 comprising a round plate 14 defining a first group of holes 30, 31 axially extending therethrough, the round plate being co-axially attached to the shaft at a forward end of the shaft, and at least one standard fastener 34 for selectively engaging only the plate through at least one of the holes in the first group to thereby add an asymmetric balancing weight to the plate relative to a rotational axis of the shaft. The plate further comprises a mounting system independent of the first group of holes for mounting a nose cone 24/27/38 to the plate, with the mounting system comprising bolt 36. The plate comprises a position element (unnumbered, near 15) on a forward surface thereof for

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co-axially aligning the nose cone with the shaft. The plate comprises a position element (unnumbered, the conical bore) on a rear surface thereof for co-axially aligning the plate with the shaft. Claim 1, lines 6-9 use the language “at least one standard fastener for selectively engaging only the plate ... to thereby add an asymmetric balancing weight to the plate relative to a rotational axis of the shaft.” This is a recitation of intended use and a functional recitation. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997). The standard fastener is provided for selectively engaging only the plate when the parts 24, 27, and 38 are not attached, during initial assembly. Concerning claims 10-15, note the apparatus for an aircraft engine 10, comprising a nose cone 24/27/38 of the aircraft engine, a balance weight element 34, a member 14 centrally mounted to a forward end of a rotatable shaft 13 of the aircraft engine, the member including a mounting apparatus (bolt 36) by which the nose cone is mounted to the member and a balancing apparatus distinct from the mounting apparatus (the unnumbered holes through which the balancing bolts 34 passes), and the balancing apparatus of the member adapted to retain the balance weight element to the member asymmetrically relative to shaft rotation to rotationally balance the shaft. The member includes a plurality of attachment points 30, 31 and the weight element and the attachment points are configured permit the weight element to be attached to the member from a forward side of the member. The nose cone and the mounting apparatus are configured to permit



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the nose cone to be mounted to the member from a forward side of the member and cover the balance weight element. The member 14 comprises a first positioning element (unnumbered, near 15) thereof to align the member with the shaft for the central mounting of the member to the shaft. The member comprises a second positioning element thereof (unnumbered, the conical bore) to co-axially align the nose cone with the member.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leone 3,990,814 in view of Rosan 2,685,320. Leone discloses an apparatus substantially as claimed as

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set forth above, including a plate 22 with unnumbered holes of the second group, but does not disclose that the plate comprises a plurality of clinch nuts attached to the respective holes of the second group on a rear surface of the plate for engaging the respective mounting bolts (claim 6), and does not disclose that the plate comprises means on the rear surface thereof for restraining rotation of the respective clinch nuts (claim 7).

Rosan (figure 4) teaches that a plate 20a comprises a clinch nut 12a attached to a hole on a rear surface of the plate for engaging an unnumbered mounting bolt, with the plate comprising means (having a mirror image to the serrated element like 14 in figure 1 on the plate) on the rear surface thereof for restraining rotation of the clinch nut, for the purpose of providing for a secure manner of attachment of the nut and bolt to the plate.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the arrangement of Leone such that the plate comprises a plurality of clinch nuts attached to the respective holes of the second group on a rear surface of the plate for engaging the respective mounting bolts (claim 6), with the plate comprising means on the rear surface thereof for restraining rotation of the respective clinch nuts, as taught by Rosan, for the purpose of providing for a secure manner of attachment of the nuts and bolts to the plate. The recitation in claim 7, lines 1-2 of “means on the rear surface thereof for restraining rotation of the respective clinch nuts” invokes 35 USC 112, sixth paragraph. The clinch nut and means for restraining rotation of the clinch nut taught by Rosan is considered to be an equivalent,

because it performs the identical function in substantially the same way and produces substantially the same result as the means disclosed by applicant.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leone 3,990,814 in view of either (Osawa 5,033,923 or Nakanura 5,235,228). Leone discloses an apparatus substantially as claimed as set forth above, including standard specification-sized fasteners 24, but does not disclose that the standard specification-sized fasteners comprise a variety of standard screws having identical diameters but different lengths such that one of the screws with a selected length can be engaged in the at least one of the holes of the first group as the selected balance weight added to the plate.

Osawa (figures 1-4) shows a rotary member 1 provided with standard specification-sized fasteners 9, with the standard specification-sized fasteners comprising a variety of standard screws having identical diameters but different lengths such that one of the screws with a selected length can be engaged in at least one hole 8 of a group of holes, for the purpose of providing for selective balancing of the rotary member.

Nakanura (figures 1-5) shows a rotary member 22F/22R/24G provided with standard specification-sized fasteners 26, with the standard specification-sized fasteners comprising a variety of standard screws having identical diameters but different lengths such that one of the screws with a selected length can be engaged in at least one hole of a group of holes, for the purpose of providing for selective balancing of the rotary member.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the arrangement of Leone such that the standard specification-sized fasteners 24 comprise a variety of standard screws having identical diameters but different lengths such that one of the screws with a selected length can be engaged in the at least one of the holes of the first group as the selected balance weight added to the plate, as taught by either Osawa or Nakanura, for the purpose of providing for selective balancing.

*Allowable Subject Matter*

Claims 16-19 are allowed.

Claim 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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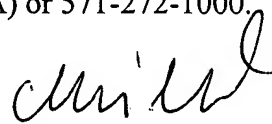
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C.V.  
December 28, 2006



Christopher Verdier  
Primary Examiner  
Art Unit 3745